A NEW SIMULIUM FROM SOUTHERN NEW MEXICO.

BY C. H. TYLER TOWNSEND, LAS CRUCES, N. M.

In the southern part of New Mexico, along the valley of the Rio Grande, there begins to appear about the first of May a buffalo gnat which is quite as troublesome, especially to man, as its more eastern congener, *S. pecuarum*. It proves to be an undescribed species. The first individuals that I have noticed this year were in an orchard near Mesilla on the 7th of May, and they were at that date swarming in considerable numbers. Mesilla is about a mile from the Rio Grande, which flows to the west of the town. Gnats were found also on same date but in less numbers on the college grounds, which are situated about four miles from the river. The river rises in May, overflows all the low areas lying adjacent to it, and becomes a roaring, rushing body of water. Its volume is dependent on the amount of snow in the foot-hills to the north particularly in Colorado, and on rains, which are only exceptionally a factor. The snow in the cañons exerts little influence, for its thaw is so gradual as not to be felt. I give these data for what bearing they may have on the breeding habits of this species. It is well known that Simulium breeds in running water, and our species no doubt is dependent on the rise of the Rio Grande for its appearance. Doubtless, also, it is distributed through the valley by the system of acequias or irrigation ditches in use in this country, which open from the river on a higher level to the north, and furnish the only source of water supply for the raising of crops. This is an adverse bearing of the question of riparian irrigation on injurious insects. The securing of artesian water and shutting off of the river water would no doubt lessen the dispersion of the gnats through the valley.

From the first part of May the gnats increase in numbers, until by the middle or last of that month they are very abundant in all parts of the valley. It is usually between this time and the middle of June that the river is at its highest point. They are then to be found on the mesa to the east toward the Organ Mts., and may be met with also on the elevated mesa nearer the mountains, especially to the north. On May 17th I observed them on the summit of the first mountain at the eastern end of the Doña Ana range, which is nearer the river than the Organs, and farther north. The elevation is at least 4,500 (probably 5,000) ft. above sea level, or about 1,500 (perhaps 2,000) ft. above the level of the river. They are not found in the Organ Mts., which are about twenty miles east of the river, nor on the plains to the east and south of them, though on the mesa to the

west they approach to within a few miles. This was observed May 23d–24th, while in the valley itself at this time they were almost unbearable.

These gnats are a great annoyance to man, by far greater than any other insect that we have in this locality. Many persons are so susceptible to them as to preserve through the height of the gnat season a chronic inflammation of the exposed parts of the face and neck resulting from repeated bites, which cause an intense irritation and even give rise to cutaneous sores. The inclination of the gnats to bite increases with the advance of the season, but the pest is considerably abated after the fall of the water. They are also very troublesome to animals, and are supposed to cause the inflamed eyes in the horses of this region through the summer months. I append a description of the species. The female alone is described, as that is the only sex which composes the biting swarms, and I have not secured either the male or the early stages.

Simulium occidentale, n. sp. ♀. Cinereous, abdomen light fulvous. Head cinereous, eyes black; face cinereous, raised, somewhat darker in the centre, sparsely clothed with fine silvery hairs; front cinereous, widened below into a cross-bar, a prong invading the orbital area on each side, silvery pubescent on the orbital margin, and with longer pubescence on the occipital margin; proboscis black, brownish at tip, palpi black; antennae cinereous, with short, silvery pubescence, the two basal joints longer than the following joints, which are nearly equal in length; occiput cinereous, with silvery pubescence around the margin. Thorax cinereous, mesoscutum entirely covered with silvery pubescence, with two dorsal lines, and usually a fainter median line between them; pleurae fulvous posteriorly; scutellum black, silvery pubescent. Abdomen light fulvous, sparsely covered with short silvery pubescence; second, third and fourth segments above with a brown cross-band shading to darker on the sides and in the middle, particularly on the third and fourth segments; remaining segments with a broad, median, dorsal, cinereous band, bounded laterally on the fifth, sixth and seventh segments by a curved, more or less faint line of brown; venter light fulvous, silvery pubescent. Legs black, silvery pubescent. Wings hyaline, iridescent by reflected lights; halteres white. Length of body 2 mm; of wing 2 mm.

Described from many fresh specimens.

This species is smaller than either *S. pecuarum* or *S. meridionale*. *S. metallicum* Bell. from Mexico is given as 2 mm. long, but it is the male which is described, and the female would be very much larger. *S. occidentale* differs from *S. pecuarum* very markedly in the thoracic and abdominal markings. These markings are very much like those of *S. meridionale;* but the median thoracic line is always very faint, the abdomen is light fulvous, the lateral lines of segments 5, 6 and 7 are curved, and the abdominal markings are of a different color, besides other minor differences.